

Universal Digital Controller

configurable for all resistance thermometers and thermocouples,
for use in all industrial applications

Characteristics

- Inputs for thermoelements, resistance thermometers or analog values over keyboard
- Linear input for direct voltage values of 0(10)-50 mV, 0(2)-10V and for direct current values of 0(4)-20mA
- Separate control outputs for heating/cooling configurable as relay, logic or analog signal
- Up to 5 alarms with eligible functions
- Alarm functions for sensor and load breakages
- IP 65 protected front panel
- Indication of short-circuited or broken sensors, LBA alarm, HB alarm



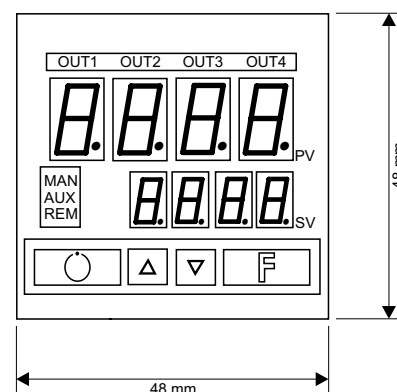
Description

The universal digital controller is the latest device in the "Green Line" series. The device offers special characteristic features for temperature control applications which require high performance and reliability but smallest size. With standard equipment, the controller can handle input signals of different kinds (thermocouple, resistance thermometer or linear signals).

Two programmable logic inputs can be configured to activate different modes. An analog input is also available and can be configured for different tasks. In all, there are five outputs. Up to four of them can be configured as logic/relay outputs and up to two can operate as isolated analog outputs.

The universal digital controller is available in three versions: as standard device, for motor-operated valve positioning and as programmable controller with up to eight program steps. All device versions are equipped with self-optimization, adaptive control and the most modern control function for the optimization of the most demanding process applications.

The controller can be rigged with an insulated current loop or an RS232- or RS485/422 interface for the digital data exchange. The transmission protocol can be configured as MOD-BUS. The data rate is configurable as well. The controller has got a double 4-digit, very brilliant display at the front panel.



Technical data

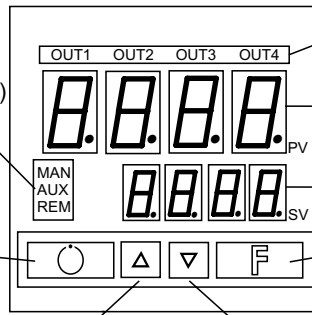
<u>Input</u>	Measurement range: (configurable)	Resistance thermometer Pt 100, 2- or 3-wire -200 ... +600 °C (-328 ... 1112 °F) Pt 1000 -200 ... +600 °C (-328 ... 1112 °F) Wire resistance compensation maximum 20 Thermoelements Type J 0 ... 1000 °C (32 ... 1832 °F) Fe-CuNi Type K 0 ... 1300 °C (0 ... 1300 °F) NiCr-Ni Type R 0 ... 1750 °C (32 ... 3182 °F) Pt13Rh-Pt Type S 0 ... 1750 °C (32 ... 3182 °F) Pt10Rh-Pt Type T -200 ... 400 °C (-328 ... 752 °F) Cu-CuNi Type B 44 ... 1800 °C (111 ... 3272 °F) Pt30Rh-Pt6Rh Type E -100 ... 750 °C (-143 ... 1382 °F) NiCr-CuNi Type N 0 ... 1300 °C (32 ... 2372 °F) NiCrSi-NiSi Type Ni 0 ... 1100 °C (32 ... 2012 °F) Ni-Ni18Mo Type L-GOST 0 ... 600 °C (32 ... 1112 °F) NiCr-CuNi Direct voltage 0 (10) ... 50 mV 0 (4) ... 20 mA 0 (2) ... 10 V Digital input: insulation 1500V, NPN 24 V 4,5 mA, PNP 24 V 3,6 mA Functions: Man / Auto, Loc / Rem, Reset / desired values 1-4 Pot: Potentiometer 0 ... 10 V
<u>Output</u>	Relay output: Logic output: Analog output: Sensor power supply: Interface:	3 A / 250 VAC 12 V / 20 mA (up to 1500 V insulated) 0 ... 10 V and 0(4) ... 20 mA 10 / 24 VDC, maximum 30 mA, short-circuit proof passive current loop, RS 485, RS 232C
<u>Display</u>	Display: Colour of display: Keyboard:	Seven segment LED, 2 x 4 positions, 10 and 8 mm respectively (down-side) Colour of display numbers green; one green LED for display of the activity of the regulating output, three red LEDs for display of the activity of the limit value outputs. 4 mechanical keys
<u>Accuracy</u>	Linearity: Compensation error: Hysteresis:	Linearity 0,2 per cent of end-scale value at an ambient temperature of 25°C 0,1°/°C -999 ... +999 scale parts
<u>Power supply</u>	Supply voltage: Scanning time:	Standard 90 ... 260 VAC 50/60 Hz, -optionally 10 ... 30 VAC/DC, maximum 5 VA 120 msec
<u>Ambient conditions</u>	Operating temperature: Storing temperature: Relative humidity of air:	0 ... +50 °C -20 ... +70 °C 20 ... 85 % rel. humidity of air
<u>Dimensions</u>	Case: System of protection: Weight:	SE-V0-polycarbonate (self extinguishing) 48 x 48 x 141 mm IP (65), front panel approx. 215 g

Operating, adjustment instructions

Function display of operating mode

MAN = OFF (automatic adjustment)
 MAN = ON (manual adjustment)
 AUX = OFF (IN1 = -AUS - internal reference value 1)
 AUX = ON (IN1 = -AUS internal reference value 2)
 REM = OFF (internal reference value)
 REM = ON (external reference value)
 or configured for the customer

Operating key automatic/manual or configured for the customer



Display of output status

OUT1 (main output), OUT2 (AL1),
 OUT3 (AL2), OUT4 (HB)

PV display

Displays the actual value.

SV display

Displays the reference value.

Function key

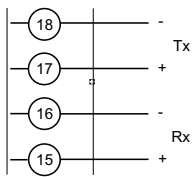
Enables access to the different levels of configuration.
 Verifies the changes in value of the chosen parameters.

"Up"- and "Down"-keys

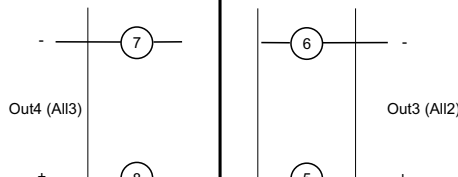
With the help of these keys, a numerical value can be increased or decreased or an option can be chosen. The speed of the upward or downward change of the displayed value is proportional to the time the key is being pressed. This process is not iterative which means that the display always stops when the maximum or minimum scale value is obtained.

Terminal connecting plan

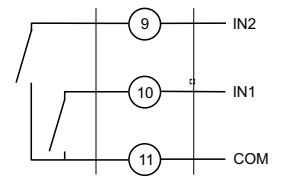
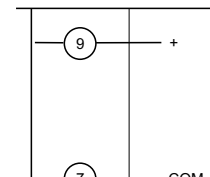
Serial interface



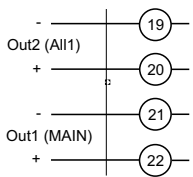
Digital input, Output 5



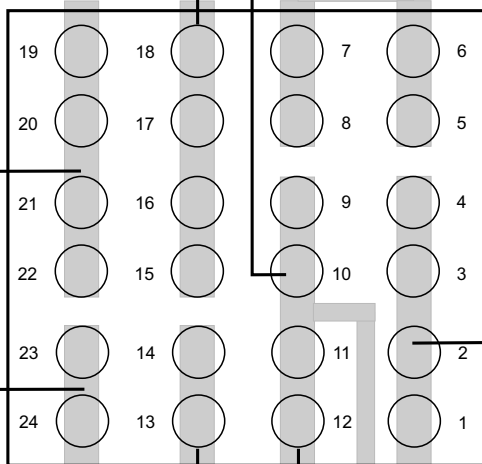
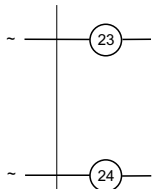
Alarm outputs 2 and 3 Analog output W1



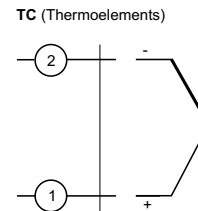
Main output Alarm output 1



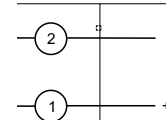
Voltage supply



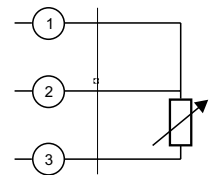
Inputs



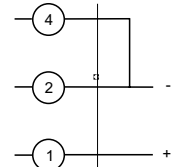
Linear (V)



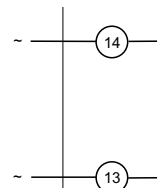
RTD Resistance thermometer Pt 100 (3 poles)



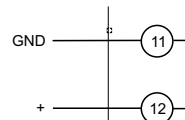
Linear (I)



Support input



Sensor power supply



Standard parameter values

CFG	Menu
S.tun	0
h_Pb	5
h_it	4
h_dt	1
h.P.Hi	100
_rSt	0
PrSt	0
A.rSt	0
_FFd	0
Soft	0
HyS.1	-1
HyS.2	-1
LbA.t	0
LbA.P	100
FAC.P	100

INP	Menu
Ctrl	6
tyPe	0
FiLt	0,1
FiLd	0,5
dP_S	0
Lo_S	0
Hi_S	1000
oFSt	0
Lo_L	0
Hi_L	1000

PROT	Menu
Prot	1

OUT	Menu
AL.xr	0
AL.xt	0
rL.O.x	x
_Ct.x	20
_rEL	0

HRD	Menu
hrd.1	0
hrd.2	3
SEnS	0
AL.nr	1
butt	1
diSP	0
LEd.1	1
LEd.2	2
LEd.3	10

Ordering code

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No.	Input	Output	Serial interface	Power supply			Adjusted input
0	0 - 1 V	Relay	insulated current loop	10 ... 30 VAC/VDC			Thermoelement type K
1	0 - 10 V	Driver	RS 485	90 ... 260 VAC/DC			
2	0(4) - 20 mA	Static	RS 232C				
3	Potentiometer	0 ... 10 V					
4	Current transformer	0(4) ... 20 mA					
5							